

# GENUS 2 CURVES WITH SEVERAL POINTS CONTAINED IN AN ARITHMETIC PROGRESSION IN ITS JACOBIAN

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ABSTRACT. I will report on extensive computations (by my student Andreas Kühn and extended by myself) of moduli spaces for genus 2 curves  $C$  together with an  $r$ -tuple of points  $P_1, \dots, P_r$  such that the differences of all these points and their hyperelliptic conjugates lie in a cyclic subgroup of the Jacobian of  $C$ . These results suggest some conjectures on the general behavior of these spaces. The computations also produced some examples of curves with interesting properties.